

December 16, 2011

To: Executive Board

Subject: **Ecoliner Update**

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### **Recommendation**

Receive and file the Ecoliner Update Report.

### **Analysis**

September 7, 2011 marked the regular service launch of the Foothill Transit Ecoliner, the first all-electric, fast charge, heavy duty transit bus in regular service in the U.S. Prior to the regular service launch, the three buses have successfully transported customers more than 15,000 miles.

The shakedown of the buses has been slow but has gone well. Coach operators and customers like the bus, technical problems were foreseeable, and resolutions appear effective. Electric bus program marketing, vehicle introduction, and the initial operating experience have met expectations.

The project has been highlighted in a number of trade magazines on three continents and a Jay Leno's Garage internet video episode. Hundreds of visitors from the United States, Europe, South America, Australia, and Asia have ridden the bus. The Ecoliner has been featured in numerous community events in the Foothill Transit service area, won a car show trophy at a benefit event and the buses have provided transportation services to Southern California Edison (SCE) and Public Utilities Commission (PUC) executives from across the country. Riders have included Congressman Mica, representatives of the Federal Transit Administration (FTA), American Public Transportation Association (APTA), the California Transit Association (CTA), as well as numerous local elected officials. Foothill Transit recently received the AQMD's most prestigious Clean Air Award with the Ecoliner being a prime component of that accolade. A digital picture file of the Ecoliner traveled into low Earth orbit aboard the Space Shuttle and just last Saturday digital photo files of the Ecoliner and it's big brother the Silver Streak started a 350 million mile, eight month journey, to the Red Planet for an eventual Martian landing aboard the Rover Curiosity. How's that for commuter service?

### **Current Challenges**

#### Electric Rates

As Foothill Transit becomes more deeply entrenched in this cutting edge program, challenges, some unforeseen, have arisen. First, while electricity in and of itself is

relatively inexpensive, the utility-imposed midday demand charges raise the base cost of energy dramatically. Southern California Edison (SCE) recently migrated the current Foothill Transit rate to one which will moderately lower peak demand charges to a more acceptable level but will dramatically lower this cost when the fleet expands to the planned 12 buses. Bus manufacturer Proterra, independent of the Foothill Transit effort has enlisted a PUC analyst to look at a complete exemption for demand charges for electric vehicles. That work is just underway. The SCE rate adjustment will put fuel costs in the neighborhood of CNG but the potential exists for much lower costs in the future.

## Fast Charger Maintenance

Foothill Transit has yet to secure a contract for the long term maintenance of the fast charge station. Foothill Transit requires a charge station with literally 100% uptime to support Line 291 service. The lack of historical data and experience for this prototype equipment and proprietary design, limits the development of realistic cost models for its maintenance. Until this issue is resolved, Proterra will take full responsibility for its operation and maintenance.

## **Current Status**

### The Buses

Bus 2001 has received all of the retrofits identified as a result of the shakedown and inspection work by Foothill Transit Operations, Proterra, and First Transit.

Bus 2002 is at the Proterra Greenville Facility receiving those retrofits and is expected to be returned in the next few weeks.

Bus 2003 will travel to Greenville for the retrofits and is expected to be returned in mid-March 2012

Charger debugging continues but has not affected its operational capability. Full final acceptance of the charger is expected the week of December 12<sup>th</sup>, 2011.

## **Service**

Since the introduction of the Ecoliners, the three buses have been alternated in Line 291 unscheduled shadow service and have accumulated over 15,000 miles, had hundreds of fast charges and carried thousands of passengers.

In September of 2011 the first regularly scheduled Ecoliner run commenced. That run has the Ecoliner being one of the first buses out on Line 291 in the morning and one of

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the last buses in at night. It operates over 16 hours per day, seven days a week and accumulates about 160 miles each day. At this service rate this bus will accumulate about 48,000 miles per year and is a direct replacement for CNG buses currently operated on Line 291. While there was a bit of a rocky start of service, over the last few weeks the Ecoliner, the charger and the coach operators have performed well, providing 100 percent of the scheduled service.

In March 2012 the second regularly scheduled Ecoliner run on Line 291 will begin.

### Budget Impact

Funding for the Ecoliner project is included in Foothill Transit's FY 2012 Business Plan.

Sincerely,



George Karbowski  
Director of Operations and Maintenance



Doran J. Barnes  
Executive Director